

## Dr. Matthew D. Eastin

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## EDUCATION

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- Aug., 2003      Ph.D.    **Department of Atmospheric Science, Colorado State University**  
*Dissertation:* “Buoyancy of convective vertical motions in the inner core of intense hurricanes”  
*Advisor:* William M. Gray, Ph.D.
- Aug., 1999      M.S.     **Department of Atmospheric Science, Colorado State University**  
*Thesis:* “Instrument wetting errors in hurricanes and a re-examination of inner core thermodynamics”  
*Advisor:* William M. Gray, Ph.D.
- May, 1996      B.S.     **Department of Earth and Atmospheric Science, Purdue University**  
*Honors Thesis:* “Climatology of the kinetic energy associated with the subtropical jet stream over the Australian-South Pacific region”  
*Advisor:* Dayton G. Vincent, Ph.D.

## PROFESSIONAL EXPERIENCE

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- 2006 – present    **Assistant Professor of Meteorology**  
University of North Carolina at Charlotte, Charlotte, NC  
*Teaching:* Tropical Meteorology (METR 4000)  
Advanced Synoptic Meteorology (METR 4245)  
Mesoscale Meteorology  
Meteorological Instrumentation  
*Research Foci:* Tropical cyclone structure and intensity change  
Tornado-genesis during tropical cyclone landfalls
- 2004 – 2006      **Assistant Professor of Math and Environmental Science**  
Central College, Pella, IA  
*Teaching:* Introduction to Statistics (MATH105)  
*Research Foci:* Tropical cyclone structure and intensity change  
Local wind turbine feasibility
- 2003 – 2004      **Post-doctoral Research Associate, National Research Council**  
NOAA/AOML/Hurricane Research Division, Miami, FL  
*Research Focus:* Tropical cyclone structure and intensity change
- 1996 – 2003      **Graduate Research Assistant, Tropical Meteorology Research Group**  
Department of Atmospheric Science, Colorado State University, Fort Collins, CO  
*Research Focus:* Tropical cyclone structure and intensity change

- 1998 – 2000     **Graduate Teaching Assistant**  
 Department of Atmospheric Science, Colorado State University, Fort Collins, CO  
*Courses:* Daily Weather Lab (AT540)  
             Weather Analysis and Forecasting (AT655)  
             The Tropical Atmosphere (AT742)  
*Role:* Prepared and gave lectures, homework, and exams; assigned grades
- 1994 – 1996     **Student Assistant / Intern**  
 National Weather Service Forecast Office, Indianapolis, IN  
*Duties:* NOAA weather radio, hourly surface observations, forecaster assistance
- 1993 – 1996     **Undergraduate Research Assistant**, Tropical Meteorology Research Group  
 Department of Earth and Atmospheric Science, Purdue University, West Lafayette, IN  
*Research Focus:* Relationships between southern hemisphere general circulation and tropical climate variability

## SELECTED AWARDS AND HONORS

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- 2005            **Collaborative Research: Impact of Externally and Internally Modulated Convection on Tropical Cyclone Evolution**  
*National Science Foundation (Award #: ATM-0514214)*  
 September 15, 2005 to September 14, 2008. Co-PIs: Eastin, Reasor, Nolan, and Marks
- 2002            **Max Eaton Award**  
*American Meteorological Society*  
 Best student paper and presentation at the 25<sup>th</sup> Conference on Hurricanes and Tropical Meteorology, San Diego, CA, May 2002
- 2001            **Herbert Riehl Memorial Award**  
*Department of Atmospheric Science, Colorado State University*  
 Best published manuscript by a graduate student
- 1997            **Father James B. Macelwane Award, First Place**  
*American Meteorological Society*  
 Best honors thesis by an undergraduate student
- 1996            **Certificate of Recognition**  
*NOAA National Weather Service*  
 For the implementation of hydrological forecasting software at the Indianapolis NWSFO
- 1996            **Outstanding Senior in the Department of Earth and Atmospheric Science**  
*Purdue University*
- 1994 – 1996     **Barry M. Goldwater Scholarship**, Purdue University
- 1996 – present   **Phi Beta Kappa National Honor Society**, Membership
- Golden Key National Honor Society**, Membership
- 1993 – present   **Phi Eta Sigma National Honor Society**, Membership
- Alpha Lambda Delta National Honor Society**, Membership

PEER-REVIEWED SCIENTIFIC PUBLICATIONS

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- Eastin, M. D.**, W. M. Gray, and P. G. Black, 2005: Buoyancy of convective vertical motions in the inner core of intense hurricanes. Part I: General Statistics. *Mon. Wea. Rev.*, 133, 188-208.
- Eastin, M. D.**, W. M. Gray, and P. G. Black, 2005: Buoyancy of convective vertical motions in the inner core of intense hurricanes. Part II: Case Studies. *Mon. Wea. Rev.*, 133, 209-227.
- Eastin, M. D.**, P. G. Black, and W. M. Gray, 2002: Flight-level thermodynamic instrument wetting errors in hurricanes. Part I: Observations. *Mon. Wea. Rev.*, 130, 825-841.
- Eastin, M. D.**, P. G. Black, and W. M. Gray, 2002: Flight-level thermodynamic instrument wetting errors in hurricanes. Part II: Implications. *Mon. Wea. Rev.*, 130, 842-851.
- Kossin, J. P., and **M. D. Eastin**, 2000: Two distinct regimes in the thermodynamic and kinematic structure of the hurricane eye and eyewall. *J. Atmos. Sci.*, 58, 1079-1090.
- Eastin, M. D.**, and D. G. Vincent, 1998: A 6-yr climatology of vertical mean and shear components of kinetic energy for the Australian-South Pacific Jet Stream. *J. Climate*, 11, 283-291.

ADDITIONAL SCIENTIFIC PUBLICATIONS

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- Eastin, M. D.**, P. D. Reasor, D. S. Nolan, F. D. Marks Jr., and J. F. Gamache, 2006: Evolution of low-wavenumber vorticity during rapid intensification: A dual-Doppler analysis. Preprints, 27<sup>th</sup> *Conf. on Hurricanes and Tropical Meteorology*, Monterey, CA, Amer. Met. Soc.
- Eastin, M. D.**, P. D. Reasor, F. D. Marks Jr., and J. F. Gamache, 2005: A dual-Doppler analysis of Hurricane Guillermo (1997): Interactions between the eye and eyewall during rapid intensification. Preprints, 32<sup>nd</sup> *Conf. on Radar Meteorology*, Albuquerque, NM, Amer. Met. Soc.
- Eastin, M. D.**, P. D. Reasor, J. F. Gamache, F. D. Marks Jr., and M. L. Black, 2004: Observed evolution of eyewall convection and low-wavenumber flow in Hurricane Guillermo (1997). Preprints, 26<sup>th</sup> *Conf. on Hurricanes and Tropical Meteorology*, Miami Beach, FL, Amer. Met. Soc., 445-446.
- McNoldy, B. D., **M. D. Eastin**, C. M. Rozoff, and W. H. Schubert, 2004: Multiple eyewall structure of Hurricane Juliette 2001. Preprints, 26<sup>th</sup> *Conf. on Hurricanes and Tropical Meteorology*, Miami Beach, FL, Amer. Met. Soc., 126-127.
- Eastin, M. D.**, 2003: Buoyancy of convective vertical motions in the inner core of intense hurricanes. Atmos. Sci. Paper No. 744, Colorado State University, 154 pp.
- Eastin, M. D.**, 2002: Observational analysis of buoyancy in the intense hurricane eyewalls. Preprints, 25<sup>th</sup> *Conf. on Hurricanes and Tropical Meteorology*, San Diego, CA, Amer. Met. Soc., 640-641.
- Eastin, M. D.**, 2000: Evaluation of buoyant motions within the hurricane inner core. Preprints, 24<sup>th</sup> *Conf. on Hurricanes and Tropical Meteorology*, Ft. Lauderdale, FL, Amer. Met. Soc., 454-455.
- Eastin, M. D.**, 1999: The effects of instrument wetting errors on eyewall buoyancy in hurricanes. Preprints, 23<sup>th</sup> *Conf. on Hurricanes and Tropical Meteorology*, Dallas, TX, Amer. Met. Soc., 885-888.
- Eastin, M. D.**, 1999: Instrument wetting errors in hurricanes and a re-examination of inner-core thermodynamics. Atmos. Sci. Paper No. 683, Colorado State University, 203 pp.

**Eastin, M. D.**, and D. G. Vincent, 1997: Climatology of barotropic and baroclinic components of kinetic energy for the Australian-South Pacific jet stream. Preprints, *5<sup>th</sup> Conf. on Meteorology and Oceanography of the Southern Hemisphere*, Pretoria, South Africa, Amer. Met. Soc., 142-143.

**Eastin, M. D.**, and D. G. Vincent, 1997: Annual and interannual variability in the kinetic energy of the Australian-South Pacific jet stream. Preprints, *7<sup>th</sup> Conf. on Climate Variations*, Long Beach, CA, Amer. Met. Soc., 142-143.

## ORAL AND POSTER PRESENTATIONS

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- Apr. 2006      “Evolution of low-wavenumber vorticity during rapid intensification: A dual-Doppler analysis.”  
27<sup>th</sup> Conf. on Hurricanes and Tropical Meteorology, Monterey, CA
- Oct. 2005      “A dual-Doppler analysis of Hurricane Guillermo (1997): Interactions between the eye and eyewall during rapid intensification  
32<sup>nd</sup> Conf. on Radar Meteorology, Albuquerque, NM
- Apr. 2004      “Observed evolution of eyewall convection and low-wavenumber flow in Hurricane Guillermo (1997)”  
26<sup>th</sup> Conf. on Hurricanes and Tropical Meteorology, Miami, FL
- Feb. 2003      “Observational evidence that ‘hot towers’ are an integral component of intense hurricane eyewalls”  
**Invited Poster**, Simpson Symposium, Long Beach, CA
- Sep. 2002      “Is convection in the inner core of intense hurricanes buoyant?”  
**Invited Talk**, NOAA Hurricane Research Division, Miami, FL
- Apr. 2002      “Observational analysis of buoyancy in intense hurricane eyewalls”  
25<sup>th</sup> Conf. on Hurricanes and Tropical Meteorology, San Diego, CA
- Feb. 2002      “Is convection in the inner core of intense hurricanes buoyant?”  
**Invited Talk**, Mile High Hurricane Society, Fort Collins, CO
- Mar. 2001      “The quality of GPS dropsonde temperature and humidity measurements in hurricanes”  
**Invited Talk**, NCAR/AVAPS Users Group Meeting, Boulder, CO
- Jun. 2000      “Evaluation of buoyant motions within the hurricane inner core”  
24<sup>th</sup> Conf. on Hurricanes and Tropical Meteorology, Fort Lauderdale, FL
- Jun. 2000      “Instrument wetting errors in hurricanes: Magnitude, frequency, and effects upon thermodynamic structure”,  
24<sup>th</sup> Conf. on Hurricanes and Tropical Meteorology, Fort Lauderdale, FL
- Jan. 1999      “The effects of instrument wetting errors on eyewall buoyancy in hurricanes”  
23<sup>rd</sup> Conf. on Hurricanes and Tropical Meteorology, Dallas, TX
- Feb. 1997      “Annual and interannual variability in the kinetic energy of the Australian-South Pacific jet stream”  
7<sup>th</sup> Conf. on Climate Variations, Long Beach, CA
- Apr. 1996      “Climatology of kinetic energy associated with the subtropical jet stream over the Australian-South Pacific region”  
Butler University Undergraduate Research Conference, Indianapolis, IN

## ADVISING

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- 2005      **Stephen Kearney**, Senior Honors Thesis, Outside Committee Member  
 Department of Geologic and Atmospheric Science, Iowa State University, Ames, IA  
*Thesis*: “Relationship between hurricane intensity change and changes in eye diameter”

## RESEARCH FIELD PROJECTS

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- 2004 – 2005      **Central College Wind Turbine Feasibility Study**  
*Duties*: Collected, quality-controlled, and analyzed meteorological data; provided estimates of electric power generation and net financial savings
- 1997 – 2004      **NOAA/AOML/HRD Hurricane Field Program**  
*Duties*: Collected and quality-controlled data in flight; provided ground-based support of aircraft operations

## PROFESSIONAL AND ACADEMIC SERVICE

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- 2004 – 2005      **Consultant**, 3M Corporation
- 2004              **Chair**, Max Eaton Award Committee  
 26<sup>th</sup> Conf. on Hurricanes and Tropical Meteorology, Miami, FL
- 2001 – present   **Regular Scientific Reviewer**, *Journal of Atmospheric Science*  
*Monthly Weather Review*  
*National Science Foundation*
- 1997 – 2002      **Ph.D. and M.S. student representative**  
 Department of Atmospheric Science, Colorado State University
- 1995 – 1996      **President**, Purdue Meteorological Association
- 1994 – 1996      **Meteorology tutor**, Purdue University

## PROFESSIONAL DEVELOPMENT

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- 2005              Selected Participant, **AMS Educational Forum**, “A Primer on Radar Analysis Techniques used in Mesoscale Meteorology”, Albuquerque, NM
- 2005              Selected Participant, **Information Literacy Workshop**, Central College, Pella, IA
- 2005              Selected Participant, **Iowa College Foundation Summer Workshop**, “Technology & Education: The Integrated Classroom”, Central College, Pella, IA
- 1998              Selected Participant, **Hurricanes at Landfall Symposium**, NOAA/NCAR, Boulder, CO

## PROFESSIONAL AFFILIATIONS

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- 1994 – present   **American Meteorological Society**
- 2001 – present   **American Geophysical Union**
- 2005 – present   **Royal Meteorological Society**

## COMPUTER EXPERIENCE

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<b>Operating Systems:</b>	Linux, UNIX, MS Windows
<b>Programming Languages:</b>	C, FORTRAN, HTML
<b>Data Analysis Software:</b>	GrADS, SOLO, ASPEN, MS Excel, SPSS
<b>Word Processing Software:</b>	MS Word, LaTeX

## PROFESSIONAL REFERENCES

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**Frank D. Marks Jr., Ph. D.**  
Post-doctoral research supervisor

Hurricane Research Division  
NOAA/AOML  
4301 Rickenbacker Causeway  
Miami, FL 33149  
Telephone: (305) 361 – 4321  
Facsimile: (305) 361 – 4402  
Email: [Frank.Marks@noaa.gov](mailto:Frank.Marks@noaa.gov)

**William M. Gray, Ph. D.**  
Graduate research advisor  
Graduate teaching supervisor

Department of Atmospheric Science  
Colorado State University  
Fort Collins, CO 80523  
Telephone: (970) 491 – 8681  
Facsimile: (970) 491 – 8449  
Email: [gray@atmos.colostate.edu](mailto:gray@atmos.colostate.edu)

**Robert Franks, Ph. D.**  
Department Head

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Central College  
812 University  
Pella, IA 50219  
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Facsimile: (641) 628 – 5316  
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**Wendy Weber, Ph. D.**  
Undergraduate Teaching Mentor

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Central College  
812 University  
Pella, IA 50219  
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Facsimile: (641) 628 – 5316  
Email: [wendyw@central.edu](mailto:wendyw@central.edu)

**Paul D. Reasor, Ph. D.**  
Current research collaborator

Department of Meteorology  
The Florida State University  
Tallahassee, FL 32306-4520  
Telephone: (850) 644 – 4056  
Facsimile: (850) 644 – 9642  
Email: [reasor@met.fsu.edu](mailto:reasor@met.fsu.edu)

**Peter G. Black, Ph. D.**  
Graduate research committee member

Hurricane Research Division  
NOAA/AOML  
4301 Rickenbacker Causeway  
Miami, FL 33149  
Telephone: (305) 361 – 4320  
Facsimile: (305) 361 – 4402  
Email: [Peter.Black@noaa.gov](mailto:Peter.Black@noaa.gov)

**Michael T. Montgomery, Ph.D.**  
Graduate research committee member

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Colorado State University  
Fort Collins, CO 80523  
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Facsimile: (970) 491 – 8449  
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